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U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
Division of Forest Insect Investigations

ANNUAL REPORT OF FOREST INSECT CONTROL
IN THE CORTE MADERA INFESTATION AREA,
CLEVELAND NATIONAL FOREST
FISCAL YEAR 1953

The Corte Madera infestation area is located approximately 50 miles east of San Diego, California, and within view of the U. S.-Mexico border. This area includes part of sections 15, 16, 17, 20, 21, 22, 27, 28, 29, T. 16S, R. 4E, S.B.M., Descanso Ranger District, Cleveland National Forest. (See attached map.)

Forest insect control in this area dates back to the winter of 1930, when the first control project was undertaken by the Corte Madera Land Company. Since that beginning, control of forest insects has been an annual winter project. At the present time the private land is in the ownership of a few individuals, who make up what is known as the Corte Madera Corporation. These owners annually make available whatever funds are necessary to carry out control of insects on the timbered portions of their holdings. The U. S. Forest Service has assumed the responsibility for treatment of the insect-infested trees on both the Government and private lands.

Host Species and Insect

The private land is for the most part fairly flat and accessible and contains a mixture of Coulter and Jeffrey pine. The Government ownership is primarily on steep, rocky slopes, containing a great deal of brush, and running almost entirely to Coulter pine.

Hosts and major insect species are as follows:

Coulter pine - Western pine beetle, Dendroctonus brevicomis Lec.; California flatheaded borer, Melanophila californica Van Dyke; and the California five-spined engraver, Ips confusus (Lec.).

Jeffrey pine - California flatheaded borer, Melanophila californica Van Dyke; and the California five-spined engraver, Ips confusus (Lec.).

The Infestation

Populations of the western pine beetle in Coulter pine in the Corte Madera infestation area have remained fairly high during the past two years, despite the fact that prior to this year all control efforts have been geared to cope with the western pine beetle problem. The current drought probably has been

responsible in a large part for the sustained high beetle population, not only in this particular area, but throughout southern California.

The California flatheaded borer has been just as destructive as the western pine beetle in causing tree mortality, particularly in Jeffrey pine, but up to this year no sustained effort has been made to control it. The destructiveness of the borer has been recognized for many years, but control has not been undertaken chiefly because of the absence of evidence that direct control would work against this insect.

The Control Operation

Corte Madera is one of two areas in southern California selected in 1953 as a proving ground for direct control of the California flatheaded borer. A year around program of spotting and treating currently infested trees, both those attacked by the western pine beetle and those attacked by flatheaded borers, has been placed in effect. This system is designed to prevent the pyramiding of insect populations during the warmer months of the year when insect activity is at its peak. It is possible to carry on such a program now where it was not possible to do so formerly. This is due to the fact that penetrating oil sprays can now be employed for treating infested logs during periods when the use of fire is precluded because of the hazard to the secondary timber, whereas formerly fire was the only satisfactory method available.

The control operations were carried on at intervals throughout 1953 as newly attacked trees were spotted and as finances allowed. The project was a cooperative one involving the Corte Madera Corporation and the U. S. Forest Service. All spotting and treating, on both private and Government land, was done by the U. S. Forest Service under the direction of Ray Rice.

All infested western pine beetle and California flatheaded borer trees were treated, either by burning, or by spraying all infested parts of the tree with orthodichlorobenzene (1 part) in diesel fuel (6 parts). In the latter method the trees were felled, bucked into suitable lengths for rolling, and then sprayed on all sides. The tops and limbs were lopped and scattered. The trees were treated when the insects were in the larval or prepupal stage. Although no formal tests have been made to determine the effectiveness of this spray on flatheaded borers, all trees examined so far have yielded practically 100% mortality.

Number of trees spotted:

| | |
|--|------------|
| Government land - Western pine beetle infested | 115 |
| - Flathead infested | 31 |
| Private land - Western pine beetle infested | 34 |
| - Flathead infested | <u>22</u> |
| TOTAL | <u>202</u> |

Number of trees treated:

| | |
|---|----|
| Government land - Western pine beetle infested - burned | 65 |
| - sprayed | 32 |
| - Flathead infested | 15 |
| - sprayed | 3 |

TOTAL 115

| | |
|--|----|
| Private land - Western pine beetle infested - burned | 5 |
| - sprayed | 14 |
| - Flathead infested | 5 |
| - sprayed | 15 |

TOTAL 39

| | |
|---|------|
| Average d.b.h. | 17" |
| Man days | 214 |
| Trees per man day | 1.25 |
| Approximate gallons of ortho used | 58 |
| Approximate gallons of diesel fuel used. . | 348 |
| Average number of gallons of spray per tree | 7.4 |

Technical assistance was furnished by the Division of Forest Insect Investigations, Berkeley, California.

Costs

Expenditure on private land:

| | |
|--|----------|
| Western pine beetle infested | \$267.67 |
| Flathead infested | 214.08 |

TOTAL \$481.75

Expenditure on Government land:

| | |
|--|-----------|
| Western pine beetle infested | \$2735.20 |
| Flathead infested | 192.30 |

TOTAL \$2927.50

Average cost per tree treated on private land \$12.35

Average cost per tree treated on Government land 25.46

The higher cost per tree on Government land is due to the inaccessibility of the area and the brush and steep slopes encountered.

Recommendations

1. That the present system of year-round maintenance control be continued.

2. That, inasmuch as this is one of the two experimental California flat-headed borer control areas, every effort be made to provide for complete spotting and treating of all borer-infested trees each year.
3. That the Division of Forest Insect Investigations keep in close contact with this project to ascertain the degree of control obtained by treating flatheaded borer infested trees.

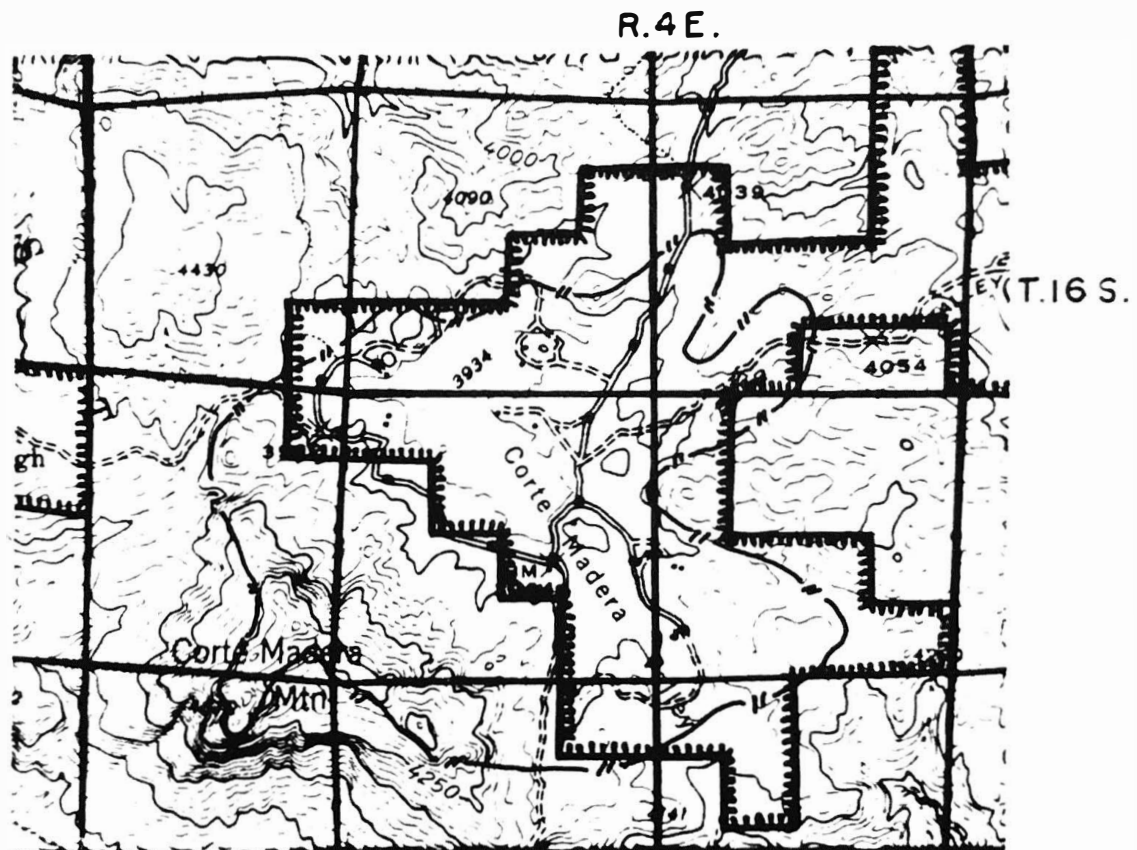
Berkeley, California
January 29, 1954

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Entomologist

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
BERKELEY FOREST INSECT LABORATORY

CORTE MADERA INFESTATION AREA

SAN BERNARDINO MERIDIAN



PRIVATE LAND



BOUNDARY OF INFESTATION